



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/650,186	08/28/2003	Lyle V. Lehman	2002-IP-009291U1	6459
29920	7590	03/10/2011	EXAMINER	
JOHN W. WUSTENBERG			GAY, JENNIFER HAWKINS	
P.O. BOX 1431				
DUNCAN, OK 73536				
			ART UNIT	PAPER NUMBER
			3676	
			NOTIFICATION DATE	DELIVERY MODE
			03/10/2011	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

JOHN.WUSTENBERG@HALLIBURTON.COM
TIFFANY.KYLE@HALLIBURTON.COM

Office Action Summary	Application No. 10/650,186	Applicant(s) LEHMAN ET AL.	
	Examiner JENNIFER H. GAY	Art Unit 3676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
2. **Claims 14, 15, 19, 20, and 25-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

Regarding claim 14: There is insufficient antecedent basis for “the electrical power”. For the purposes of examination, it will be assumed that claim 14 depends from claim 13.

Regarding claim 15: It is unclear how, if the driver is actuated in response to the signal outputted in claim 12, the tool can be lowered after the signal is outputted and the driver, which is located within the tool, can still be able to respond to that signal. The signal sent to the surface to indicate that the tool needed to be lowered would have dissipated and no longer is able to be used to actuate the driver; an additional signal would be required even if it is the same signal originally outputted but merely outputted again.

Regarding claim 19: There is insufficient antecedent basis for “the accumulated scale”.

Regarding claim 25: The phrase “means coupled to the supporting means for vibrating” is considered to be generally confusing. It is suggested that the phrase be amended to read --means for vibrating coupled to the supporting means--.

The claim recites several limitations that are means (or step) plus function limitations that invokes 35 U.S.C. 112, sixth paragraph. However, the written description

Art Unit: 3676

fails to clearly link or associate the disclosed structure, material, or acts to the claimed function such that one of ordinary skill in the art would recognize what structure, material, or acts perform the claimed function.

Applicant is required to:

- (a) Amend the claim so that the claim limitation will no longer be a means (or step) plus function limitation under 35 U.S.C. 112, sixth paragraph; or
- (b) Amend the written description of the specification such that it clearly links or associates the corresponding structure, material, or acts to the claimed function without introducing any new matter (35 U.S.C. 132(a)); or
- (c) State on the record where the corresponding structure, material, or acts are set forth in the written description of the specification that perform the claimed function. For more information, see 37 CFR 1.75(d) and MPEP §§ 608.01(o) and 2181.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1-8, 10-14, 16, 18, 19, and 21-28 are rejected under 35 U.S.C. 103(a) as being obvious over Lehman et al. (US 2005/0028983, referred to hereafter as Lehman) in view of Couet et al. (US 6,886,406, referred to hereafter as Couet).**

The applied reference has a common inventor and a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor

Art Unit: 3676

under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Regarding claims 1, 12, 25, and 27: Lehman discloses a system for use in a wellbore, comprising:

- a device **24a-c** for supporting a gravel pack in the wellbore;
- at least one acoustic transducer **36** mounted on a tool and indirectly coupled to the device;
- a tool **12** adapted to be inserted in the wellbore in the vicinity of the acoustic transducer; and
- an electrical driver **34** mounted on the tool and adapted to drive the acoustic transducer to vibrate the device.

Lehman discloses all of the limitations of the above claim(s) except for the at least one acoustic transducer being mounted in the wellbore separate from the tool.

Couet discloses a system similar to that of Lehman in that it is used to detect scale build-up downhole and uses acoustic tools to remove the scale. The system of Couet includes acoustic transducers that are either mounted permanently in the wellbore **8:36-47** or can be located on a wireline run tool **13:59-64**.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified Lehman so that the at least one acoustic transducer was mounted in the wellbore as suggested by Couet in order to have ensured that the transducers were always located at the proper location relative to the gravel pack. This would have achieved the predictable result of providing for an effective cleaning of the gravel pack device as well as protecting any other downhole equipment from damage from the transducer.

Further, Couet recognizes the functional equivalence between permanently mounted acoustic transducers and locating the transducers on a wireline run tool.

Art Unit: 3676

Therefore, it would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have mounted the acoustic transducers of Lehman in the wellbore instead of on the tool, since the examiner takes Official Notice of the equivalence of mounting the transducers in either location and the selection of any of these known equivalents would be within the level of ordinary skill in the art.

Regarding claims 2, 13, 14, 26, and 28: The system further comprising a cable assembly **14** connected to the electrical driver for supplying electrical power to the driver to enable the electrical driver to drive the acoustic transducer.

Regarding claims 3 and 21-23: Vibration of the device breaks up any scale on the device and stimulates a formation penetrated by the wellbore **Abstract**.

Regarding claims 4 and 16: Lehman, as modified by Couet, discloses that the at least one acoustic transducer comprises two acoustic transducers mounted in the wellbore and coupled to the device, wherein the acoustic transducers are axially-spaced in the wellbore and adapted to vibrate the device **pgh 26**.

Regarding claim 5: Wherein the acoustic transducer comprises an electromechanical transducer that vibrates in response to an electrical signal **pgh 15**.

Regarding claim 6: Wherein the acoustic transducer is selected from the group consisting of a tuning fork, a cantilevers, an oval-mode tool, a magnetostrictive driver, and a piezoelectric transducer **pgh 15**.

Regarding claim 7: Wherein the electrical driver is connected to a source of electric power and produces an electrical output that drives the acoustic transducer **pgh 16**.

Art Unit: 3676

Regarding claim 8: The system further comprising: a sensor **38** for sensing the amount of scale accumulating on the device and outputting a signal when the accumulated scale exceeds a predetermined value; and means **40** responsive to the signal for actuating the electrical driver.

Regarding claims 10 and 18: Wherein the sensor is a scale detector **18**.

Regarding claims 11 and 19: Lehman, as modified by Couet, discloses that the means responsive to the signal comprises: a microprocessor **40 of Lehman** for receiving the signal from the sensor; and a telemetry device **8:16-29 of Couet** for collecting data from the microprocessor and transmitting the data to the ground surface.

Regarding claim 12: Lehman, as modified by Couet, discloses the method for vibrating the device for supporting a gravel pack using the system of claim 1.

Regarding claims 24 and 25: In paragraph 21 Lehman discloses that the scale can be recovered to the surface via any conventional means. Lehman does not disclose using either production or non-production fluid. However, the Examiner takes **OFFICIAL NOTICE** that, in view of the teachings of Lehman, it would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have used any conventional means to remove the scale from the wellbore. These means include allowing the scale to flow with production fluid thus eliminating the need to stop production and run in additional equipment or using non-production fluids to circulate out the scale thus eliminating the need to separate out the scale from the production fluid when it reached the surface.

5. **Claims 9 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lehman in view of Couet as applied to claims 1 and 12 above, and further in view of Restarick et al. (US 6,554,064, referred to hereafter as Rest).**

Lehman, as modified, discloses all of the limitations of the above claim(s) except for the sensor comprising pressure sensors disposed on opposite sides of the device.

Rest discloses a system for monitoring conditions across a gravel pack device and controlling production through that device based on those conditions. The system includes the use of sensors **102** located on either side of a gravel pack screen **Fig 7a**. The sensors can include pressure sensors **5:43-48** and can be used to monitor the “skin effect” at the gravel pack and adjust the production based on that measurement or take corrective action **7:23-49**.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have further modified the system of Lehman to include pressure sensors disposed on opposite sides of the device as taught by Rest in order to have been able to monitor the pressure drop across the device so as to get a real time and accurate measurement of the skin or scale on the device **7:23-49**.

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned

Art Unit: 3676

with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 1, 2, 4, and 6 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 2, and 20-24 of U.S. Patent No. 7,213,650 in view of Couet.

Regarding claims 1 and 4: Claims 1 and 2 of U.S. Patent No. 7,213,650 disclose essentially the same structural elements as those of claims 1 and 4 of the instant application with the exception that the driver in claims 1 and 2 of U.S. Patent No. 7,213,650 is mounted on the device that supports the gravel pack instead of on the tool to be inserted into the wellbore.

However, Couet discloses a similar system in that it is used to detect scale build-up downhole and uses acoustic tools to remove the scale. The system of Couet includes acoustic transducers that are either mounted permanently in the wellbore **8:36-47** or can be located on a wireline run tool **13:59-64**.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified claims 1 and 2 of U.S. Patent No. 7,213,650 so that the at least one acoustic transducer was mounted on a tool instead of in the wellbore as suggested by Couet in order to have provided the flexibility of activating the transducers with a driver that could easily be moved around within the wellbore as well removed for repair. This would have also allowed for the same driver to be used in multiple wells.

Regarding claim 1: Claim 20 or claims 21 and 24 of U.S. Patent No. 7,213,650 disclose essentially the same structural elements as those of claim 1 of the instant application with the exception that the driver (the first means and transducer respectively)

Art Unit: 3676

in claim 20 or claims 21 and 24 of U.S. Patent No. 7,213,650 is mounted on the device that supports the gravel pack instead of on the tool to be inserted into the wellbore. It is further noted that claim 20 and claims 21 and 24 of U.S. Patent No. 7,213,650 specifically recite “a screen” and not a device, however as the “device” of claim 1 of the instant application is specifically for supporting a gravel pack, it will necessarily be a screen of some sort.

However, Couet discloses a similar system in that it is used to detect scale build-up downhole and uses acoustic tools to remove the scale. The system of Couet includes acoustic transducers that are either mounted permanently in the wellbore **8:36-47** or can be located on a wireline run tool **13:59-64**.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified claim 20 or claims 21 and 24 of U.S. Patent No. 7,213,650 so that the at least one acoustic transducer was mounted on a tool instead of in the wellbore as suggested by Couet in order to have provided the flexibility of activating the transducers with a driver that could easily be moved around within the wellbore as well removed for repair. This would have also allowed for the same driver to be used in multiple wells.

Regarding claim 2: Claim 22 of U.S. Patent No. 7,213,650 discloses essentially the same subject matter as claim 2 of the instant application.

Regarding claim 6: Claim 23 of U.S. Patent No. 7,213,650 discloses essentially the same subject matter as claim 6 of the instant application.

Allowable Subject Matter

8. Claims **15 and 20** would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Art Unit: 3676

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JENNIFER H. GAY whose telephone number is (571)272-7029. The examiner can normally be reached on Monday through Friday, 7am to 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shane Bomar can be reached on (571) 272-7026. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jennifer H Gay/
Primary Examiner, Art Unit 3676

JHG
3/7/11